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TOXICITY OF INSECTICIDES TO STABLE FLIES

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The stable fly (*Stomoxys calcitrans* (L.)), or "dog fly" as it is commonly called in northwest Florida, has been a serious nuisance in that area for many years. Blakeslee¹ demonstrated that DDT applied as a residual spray to larval breeding areas in marine grass gave effective control. However, large numbers of adult flies have at times seriously affected the tourist industry of northwest Florida. Therefore, from 1963 to 1965 a search was conducted for other insecticides that might adequately control the stable fly. This report presents the results of tests with 344 compounds against larvae and adults of the stable fly.

METHODS

The methods used to evaluate the insecticides were described in detail by Mount et al.^{2/3/}. Stable fly larvae were exposed to insecticides combined with CSMA larval medium for house flies (*Musca domestica* L.), and adult flies were exposed to contact sprays of the insecticides in a wind tunnel. The insecticides were classified by toxicity, based on larval mortality after 7 days and adult mortality after 24 hours, as follows:

Larvicides

Class

- (1) Insecticides that gave less than 80 percent mortality at 6 p.p.m.
- (2) Mortality 80 percent or more at 6 p.p.m., but median lethal concentration (LC₅₀) greater than 2 p.p.m.
- (3) LC₅₀ greater than 1 p.p.m., but not greater than 2 p.p.m.
- (4) LC₅₀ 1 p.p.m. or less (lowest LC₅₀ was 0.21 p.p.m.).

^{1/} Blakeslee, E. B. DDT surface sprays for control of stable flies breeding in shore deposits of marine grass. Jour. Econ. Ent. 38: 548-552. 1945.

^{2/} Mount, G. A., Gahan, J. B., and Lofgren, C. S. Evaluation of insecticides in the laboratory against adult and larval stable flies. Jour. Econ. Ent. 58: 685-687. 1965.

^{3/} Mount, G. A., Gahan, J. B., and Lofgren, C. S. Laboratory tests with promising insecticides for control of adult and larval stable flies. Jour. Econ. Ent. [In press.]

Adulticides

Class

- (1) Insecticides that gave less than 80 percent mortality at a concentration of 0.25 percent.
- (2) Mortality 80 percent or more at 0.25 percent, but LC_{50} greater than 0.05 percent.
- (3) LC_{50} greater than 0.025 percent, but not greater than 0.05 percent.
- (4) LC_{50} 0.025 percent or less (lowest LC_{50} was 0.06 percent).

RESULTS

The results are presented in table 1. Of the insecticides evaluated as larvicides, 25⁴ were in class 1, 32 in class 2, 35 in class 3, and 21 in class 4. Of the insecticides evaluated as adulticides, 93 were in class 1, 45 in class 2, 36 in class 3, and 37 in class 4. Mortality in the untreated checks ranged from 0 to 22 percent, with an average of 6.7 percent for the larvicide tests and 6.6 percent for the adulticide tests.

SUMMARY

Three hundred and forty-four insecticides were evaluated against the stable fly (*Stomoxys calcitrans* (L.)). Larvae were exposed to 342 insecticides and adult flies were exposed to contact sprays of 211 insecticides. Twenty-one larvicides had LC_{50} 's of 1 p.p.m. or less and 37 adulticides had LC_{50} 's of 0.025 percent or less.

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Mention of chemical compounds in this report is not intended as a recommendation. No product should be used in insect control unless it is registered for the specific use intended, as clearly shown on the product label.

Table 1.---Toxicity of various insecticides to larval and adult stable flies

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
1	30746	Acetaldehyde, 3-[2-bromo-4,5-(methylene=dioxy)phenyl]-2-methylpropyl isobutyl acetal	--	1	--
2	30277X	Acetaldehyde, 2-(2-butoxyethoxy)ethyl butyl acetal (crude)	--	1	--
3	30289X	Acetaldehyde, isobutyl 6-propylpiperonyl acetal (crude)	--	1	--
4	21157	Acetic acid, bromo-, 2-chloro-1-methylethyl ester	--	1	1
5	21142	Acetic acid, bromo-, 2-(<i>p</i> -chlorophenoxy)-1-methylethyl ester	--	1	--
6	31053	Acetic acid, bromo-, 2-cyclohexylcyclohexyl ester	--	1	--
7	30739	Acetic acid, bromo-, hexadecyl ester	--	1	--
8	30901	Acetic acid, bromo-, undecyl ester	--	1	--
9	23382	Acetic acid, chloro-, 2-cyclohexyl-4,6-dinitrophenyl ester	--	1	--
10	30732	Acetic acid, chloro-, decyl ester	--	1	--
11	30386	Acetic acid, chloro-, 2,4-dimethylbenzyl ester	--	1	--
12	23376	Acetic acid, chloro-, 2,3,4,6-tetrachloro=phenyl ester	--	1	1
13	30900	Acetic acid, chloro-, undecyl ester	--	1	--
14	30442	Acetic acid, iodo-, ethylene ester	--	1	--
15	30427	Acetic acid, iodo-, 2-phenoxyethyl ester	--	1	--
16	25650	Acetic acid, mercapto-, ethyl ester, <i>S</i> -ester with <i>O</i> , <i>O</i> -diethyl phosphorodithioate	Hercules 4580	1	1
17	23438	Acetic acid, mercaptophenyl-, ethyl ester, <i>S</i> -ester with <i>O</i> , <i>O</i> -dimethyl phosphorothioate	Bay 18510	1	1
18	26958	<i>m</i> -Anisamide, <i>N,N</i> -diethyl-	Johnson 1465A144	1	1
19	22507	Benzaldehyde, <i>p</i> -(ethylsulfonyl)-, 2-benzoxazolyldiazone	--	1	--
20	31038	Benzene, 4-[1-(allyloxy)-2-bromopropyl]-1,2-(methylenedioxy)-	--	1	--
21	31073	Benzene, 1-bromo-2-[2-bromo-1-(2-butoxy=ethoxy)propyl]-4,5-(methylenedioxy)-	--	1	--

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
22	31005	Benzene, 1-bromo-2-(2-bromo-1-propoxypropyl)-4,5-(methylenedioxy)-	--	1	--
23	31033	Benzene, 4-(2-bromo-1-propoxypropyl)-1,2-(methylenedioxy)-	--	1	--
24	27126	2 <i>H</i> -1-Benzopyran-3-acetic acid, 7-hydroxy-4-methyl-2-oxo-, ethyl ester, <i>O</i> -ester with <i>O</i> , <i>O</i> -diethyl phosphorothioate	William Cooper 156H61	1	4
25	27124	2 <i>H</i> -1-Benzopyran-3-acetic acid, 7-hydroxy-4-methyl-2-oxo-, methyl ester, <i>O</i> -ester with <i>O</i> , <i>O</i> -diethyl phosphorothioate	William Cooper 29H62	2	4
26	26209	1,2,3-Benzotriazin-4(3 <i>H</i>)-one, 3-butyl-	--	1	--
27	30169	Benzyl alcohol, 2,4-dimethyl-, benzoate	--	1	--
28	20852	Butyric acid, ester with dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate	Butonate	2	1
29	26028	Butyronitrile, 4-(octylthio)-	Phillips 1455	1	--
30	25404	Butyrophene, 4',5'-(methylenedioxy)-2'-propyl-	--	1	--
31	18051	Carbamic acid, benzyl-, ethyl ester	--	1	1
32	25968	Carbamic acid, butyl-, 2-[(mercaptomethyl)=thio]ethyl ester, <i>S</i> -ester with <i>O</i> , <i>O</i> -dimethyl phosphorodithioate	Stauffer R-5977	2	1
33	24728	Carbamic acid, dimethyl-, ester with 3-hydroxy-5,5-dimethyl-2-cyclohexen-1-one	Dimetan	1	--
34	25664	Carbamic acid, dimethyl-, 2-hydroxyethyl ester, <i>O</i> -ester with <i>O</i> , <i>O</i> -diethyl phosphorothioate	Stauffer R-3244	1	1
35	17588	Carbamic acid, dimethyl-, 3-methyl-1-phenyl pyrazol-5-yl ester	Pyrolan	3	4
36	19059	Carbamic acid, dimethyl-, 6-methyl-2-propyl-4-pyrimidinyl ester	Pyramat	1	4
37	25595X	Carbamic acid, dimethyl-, 3-methylpyrazol-5-yl ester (crude)	Dimetilan	1	4
38	16341	Carbamic acid, dimethyl-, phenethyl ester	DuPont IN-8613	1	1

39	27179	Carbamic acid, ethyl-, 2-[(mercaptomethyl)=thio]ethyl ester, <i>S</i> -ester with <i>O</i> -isopropyl <i>O</i> -methyl phosphorodithioate	Stauffer R-6790	1	--
40	27041	Carbamic acid, methyl-, benzo[<i>b</i>]thien-4-yl ester	Mobil Chem. Co. MC-A-600	2	3
41	16336	Carbamic acid, methyl-, benzyl ester	--	1	--
42	27128	Carbamic acid, methyl, 5- <i>sec</i> -butyl-2-chlorophenyl ester	Calif. Chem. RE-5655	1	3
43	25911	Carbamic acid, methyl-, 5- <i>tert</i> -butyl-2-chlorophenyl ester	Hercules 9326	1	--
44	25759X	Carbamic acid, methyl-, <i>sec</i> -butylphenyl ester (a mixture of isomers)	Geigy G-35234	2	3
45	25711X	Carbamic acid, methyl-, 2-, 4-, and 6-chloro- <i>m</i> -cumenyl esters (a mixture of isomers)	Hercules 7522	1	2
46	25736	Carbamic acid, methyl-, 6-chloro-3,4-xylyl ester	Banol	1	2
47	25500	Carbamic acid, methyl-, <i>m</i> -cumenyl ester	Union Carbide UC-10854	2	4
48	25670	Carbamic acid, methyl-, <i>o</i> -cumenyl ester	Bay 39731	2	2
49	27214	Carbamic acid, methyl-, <i>o</i> -2-cyclopenten-1-ylphenyl ester	Bay 38800	1	3
50	27213	Carbamic acid, methyl-, <i>o</i> -cyclopentyl=phenyl ester	Bay 38799	1	3
51	27164	Carbamic acid, methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	Niagara NIA-10242	4	4
52	25780	Carbamic acid, methyl-, 3,5-diisopropyl=phenyl ester	Hooker HRS-1422	1	4
53	27108	Carbamic acid, methyl-, 3-(dimethyl=amino)- <i>p</i> -tolyl ester	Bay 42696	1	4
54	25784	Carbamic acid, methyl-, 4-(dimethyl=amino)- <i>m</i> -tolyl ester	Bay 44646	1	4
55	25766	Carbamic acid, methyl-, 4-(dimethyl=amino)-3,5-xylyl ester	Zectran	1	4
56	27156	Carbamic acid, methyl-, ester with salicylaldehyde, diethyl mercaptal	Hooker HRS-1630	1	--
57	25671	Carbamic acid, methyl-, <i>o</i> -isopropoxy=phenyl ester	Bay 39007	4	4

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
58	27047	Carbamic acid, methyl-, 2-[(mercapto=methyl)thio]ethyl ester, <i>S</i> -ester with <i>O</i> -isopropyl <i>O</i> -methyl phosphorodithioate	Stauffer R-6482	1	1
59	27127	Carbamic acid, methyl-, <i>m</i> -(1-methyl=butyl)phenyl ester	Calif. Chem. RE-5353	--	--
60	25726	Carbamic acid, methyl-, 4-(methylthio)-3,5-xylyl ester	Bay 37344	1	2
61	23969	Carbamic acid, methyl-, 1-naphthyl ester	Carbaryl	1	3
62	25810	Carbamic acid, methyl-, <i>o</i> -(2-propynyloxy)=phenyl ester	Hercules 9699	1	1
63	27253	Carbamic acid, methyl-, 5,6,7,8-tetrahydro-1-naphthyl ester	Union Carbide UC-8454	1	2
64	25843	Carbamic acid, methyl-, 3,4,5-trimethyl=phenyl ester	Shell SD-8530	1	3
65	24654	Crotonic acid, 3-hydroxy-, benzyl ester, dimethyl phosphate	Shell SD-4092	3	3
66	24716	Crotonic acid, 3-hydroxy-, <i>p</i> -chloro=benzyl ester, dimethyl phosphate	Shell BAS-4239	2	4
67	25573	Crotonic acid, 3-hydroxy-, <i>p</i> -chloro=phenyl ester, dimethyl phosphate	Shell SD-4056	1	2
68	24990	Crotonic acid, 3-hydroxy-, 2,4-dichloro=benzyl ester, dimethyl phosphate	Shell BAS-4457	1	2
69	24481	Crotonic acid, 3-hydroxy-, 2-hydroxy=ethyl ester, acetate, 3-(dimethyl phosphate)	Shell SD-3423	1	--
70	25574	Crotonic acid, 3-hydroxy-, <i>p</i> -methoxy=phenyl ester, dimethyl phosphate	Shell SD-4148	1	2
71	24717	Crotonic acid, 3-hydroxy-, <i>alpha</i> -methylbenzyl ester, dimethyl phosphate	Ciodrin	3	4
72	25572	Crotonic acid, 3-hydroxy-, methyl ester, 2-chloropropyl isopropyl phosphate	Shell SD-3959	2	3
73	25571	Crotonic acid, 3-hydroxy-, methyl ester, 2,3-dichloropropyl isopropyl phosphate	Shell SD-3958	1	2

74	25578	Crotonic acid, 3-hydroxy-, <i>m</i> -nitrobenzyl ester, dimethyl phosphate	Shell SD-5539	1	2
75	25577	Crotonic acid, 3-hydroxy-, <i>p</i> -nitrobenzyl ester, dimethyl phosphate	Shell SD-5533	1	3
76	25575	Crotonic acid, 3-hydroxy-, <i>p</i> -tolyl ester, dimethyl phosphate	Shell SD-4161	1	2
77	24480	Cyclohexanol, 4- <i>tert</i> -butyl-1-ethynyl-	--	1	1
78	30463	Cyclohexanol, 4-cyclohexyl-, formate	--	1	--
79	24986	1-Cyclohexene-1-carboxylic acid, 2-(2,4-dihydroxyphenyl)-, δ -lactone, <i>O</i> -ester with <i>O,O</i> -diethyl phosphoro=thioate	Dition	1	--
80	27085	Cyclopropane, 1,1-dichloro-2,2-bis(<i>p</i> -chlorophenyl)-	Gen. Chem. GC-6593	1	1
81	21195	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 6-bromopiperonyl ester	--	1	1
82	21557	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 6-chloropiperonyl ester	Barthrin	1	1
83	21170	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 2,4-dimethylbenzyl ester	Dimethrin	1	1
84	21825	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 3,4-dimethylbenzyl ester	--	1	--
85	30298	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 3-methoxy-4-(2-methylallyl)benzyl ester	--	1	--
86	30300	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, <i>o</i> -[(2-methylallyl)oxy]benzyl ester	--	1	--
87	21559	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, <i>o</i> -methylbenzyl ester	--	1	1
88	30446	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 1-naphthylmethyl ester	--	1	--

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
89	23442	<i>P</i> , <i>P</i> -Diamido- <i>P</i> '-thiopyrophosphoric acid, tetramethyl-, <i>O</i> , <i>O</i> -diethyl ester	Bay 20172	1	1
90	16225	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,=10,10-hexachloro-6,7-epoxy-1,4,4a,5,=6,7,8,8a-octahydro-	Dieldrin	1	2
91	23392	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,=6,9,10,10-octachloro-1,4,4a,5,6,7,8,8a-octahydro-	Shell SD-2653	1	1
92	15029	Diethylamine	--	1	--
93	30908	<i>m</i> -Dioxane, 2- <i>p</i> -cumenyl-5,5-dimethyl-	--	1	--
94	30653	<i>m</i> -Dioxane, 2-(9-deceny1)-	--	1	--
95	30694	<i>m</i> -Dioxane, 2-decyl-	--	1	--
96	30652	1,3-Dioxolane, 2-(9-deceny1)-4,5-dimethyl-	--	1	--
97	30688	1,3-Dioxolane, 2-decyl-4-methyl-	--	1	--
98	30352	1,3-Dioxolane, 2-(2,4-dichloropheny1)-4,5-dimethyl-	--	1	--
99	27022	Disulfide, diethoxyphosphiny1 1-ethoxy- <i>N</i> -phenylformimidoyl	Stauffer B-9340	1	1
100	27027	Disulfide, diethoxyphosphiny1 1-ethoxy- <i>N</i> -propylformimidoyl	Stauffer B-9714	1	--
101	27026	Disulfide, diethoxyphosphiny1 1-isopropoxy- <i>N</i> -phenylformimidoyl	Stauffer B-9713	1	1
102	27025	Disulfide, diethoxyphosphiny1 1-methoxy- <i>N</i> -phenylformimidoyl	Stauffer B-9712	1	1
103	1506	Ethane, 1,1,1-trichloro-2,2-bis(<i>p</i> -chloropheny1)-	DDT	1	1
104	1716	Ethane, 1,1,1-trichloro-2,2-bis(<i>p</i> -methoxypheny1)-	Methoxychlor	1	1
105	25456	Ether, bis(2,3,3,3-tetrachloropropyl)	Monsanto CP-16226	1	1
106	23585	2-Furoic acid, methyl ester	--	1	1
107	27155	Glycine, <i>N</i> -carboxy-, <i>N</i> -(1,1a,3,3a,4,5,5,=5a,5b,6-decachlorooctahydro-1,3,4-metheno-2 <i>H</i> -cyclobuta[<i>cd</i>]pentalen-2-yl) ethyl ester	Gen. Chem. GC-8266	1	--

108	32838	Hexamethylenimine, 1-octanoyl-	--	1	--
109	31063	Hexanoic acid, 4-cyclohexylcyclohexyl ester	--	1	--
110	23431	Hydrocinnamide, <i>o</i> -chloro- <i>N,N</i> -diethyl-	--	1	1
111	23432	Hydrocinnamide, <i>p</i> -chloro- <i>N,N</i> -diethyl-	--	1	1
112	27181	Hydroperoxide, 2,2-dichloro-1,1-bis-(<i>p</i> -chlorophenyl)ethyl	--	1	--
113	25809	Imidocarbonic acid, (diethoxyphosphino=thiyl)dithio-, cyclic ethylene ester	Amer. Cyan. 43064	1	1
114	25813	Imidocarbonic acid, (dimethoxyphosphino=thiyl)dithio-, cyclic ethylene ester	Amer. Cyan. CL-43356	1	1
115	30513	Isobutyric acid, 2,3,4,6-tetrachloro=phenyl ester	--	1	--
116	25542	Maleic acid, mercapto-, dimethyl ester, <i>S</i> -ester with <i>O,O</i> -diethyl phosphorodithioate	--	1	--
117	25584	4,7-Methanoindan, 1,4,5,6,7,8,8-hepta=chloro-2,3-epoxy-3a,4,7,7a-tetrahydro-	Heptachlor epoxide	1	2
118	25604	4,7-Methanoindan, 1(or 2),4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	Velsicol 53-CS-27	1	--
119	27005	4,7-Methanoindan, 1,2,3,4,5,6,7,8,8-nonachloro-3a,4,7,7a-tetrahydro-	Velsicol 48-CS-104	1	--
120	25552X	4,7-Methanoindan, 1,2(and 3),4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-	Shell SD-5532	1	1
121	25960	4,7-Methanoindene, 1-bromo-4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-	--	1	--
122	25562	4,7-Methanoindene, hexachlorofluoro-3a,4,7,7a-tetrahydro-	--	1	1
123	25545	4,7-Methanoisobenzofuran, 1,3,4,5,6,7,8,=8-octachloro-1,3,3a,4,7,7a-hexahydro-	Telodrin	2	3
124	25719	1,3,4-Metheno-2 <i>H</i> -cyclobuta[<i>cd</i>]pentalene, dodecachlorooctahydro-	Mirex	1	1
125	27154	1,3,4-Metheno-2 <i>H</i> -cyclobuta[<i>cd</i>]pentalene-2-levulinic acid, 1,1a,3,3a,4,5,5a,5b,=6-decachlorooctahydro-2-hydroxy-, ethyl ester	Gen. Chem. GC-9160	1	--
126	27153	1,3,4-Metheno-2 <i>H</i> -cyclobuta[<i>cd</i>]pentalene-2-ol, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-2-methyl-	Gen. Chem. GC-9287	1	--
127	16391	1,3,4-Metheno-2 <i>H</i> -cyclobuta[<i>cd</i>]pentalene-2-one, decachlorooctahydro	Kepone	1	1

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
128	27198	Morpholine, 4-(2-bromodecanoyl)-	--	1	--
129	27197	Morpholine, 4-(2-dodecenoyl)-	--	1	--
130	27195	Morpholine, 4-(2-nonenoyl)-	--	1	--
131	27194	Morpholine, 4-(2-octenoyl)-	--	1	--
132	26061	1-Naphthaleneacetoneitrile	--	1	--
133	25875	Norbornane, pentachloro-3-(2,2-dichloro- cyclopropyl)-2,2-dimethyl-	Hercules 9975	1	--
134	25962	<i>endo</i> -2-Norbornanecarbonitrile, <i>exo</i> -5- chloro-6-oxo-, <i>O</i> -(methylcarbonyl)oxime	Union Carbide UC 20047	1	--
135	23393	2-Norbornene, 5-(bromomethyl)-1,2,3,4,= 7,7-hexachloro-	Shell SD-2774	1	1
136	27053	2-Norbornene, 1,2,3,4,7,7-hexachloro- 5,6-bis(chloromethyl)-	Alodan	1	--
137	23394	2-Norbornene, 1,2,3,4,7,7-hexachloro- 5-(chloromethyl)-	Shell SD-2801	1	1
138	23447	2-Norbornene, 1,2,3,4,7,7-hexachloro- 5-(dichloromethyl)-	Hercules 426-D	1	1
139	23979	5-Norbornene-2,3-dimethanol, 1,4,5,6,= 7,7-hexachloro-, cyclic sulfite	Endosulfan	1	2
140	20862	Octanoic acid, ester with dimethyl (2,2,2-trichloro-1-hydroxyethyl)= phosphonate	--	1	1
141	25525	1-Oxaspiro[4.4]nona-6,8-diene, 2,3,6,7,= 8,9-hexachloro-	Velsicol 57-CS-41	1	1
142	25609	Phosphinothioic acid, dimethyl-, <i>O</i> -[4-(methylthio)- <i>m</i> -tolyl] ester	Bay 34098	3	2
143	25966	Phosphonic acid, [(cyanodithio)methyl= idyne]tri-, hexaethyl ester	Stauffer N-3338	1	--
144	25601	Phosphonic acid, (2,2-dichloro-1- hydroxyvinyl)-, dimethyl ester, acetate	--	1	--
145	24422	Phosphonic acid, (2,2-dichloro-1-hydroxy- vinyl)-, dimethyl ester, dimethyl phosphate	Monsanto CP-11223	1	1
146	24043	Phosphonic acid, (dithiodimethylene)di-, tetraethyl ester	Monsanto CP-7394	3	2

147	23062	Phosphonic acid, ethyl-, ethyl ester, anhydride with <i>O,O</i> -diethyl phosphorothioate	--	1	1
148	24951	Phosphonic acid, (mercaptomethylidene)=tri-, hexaethyl ester, <i>S</i> -ester with <i>O,O</i> -diethyl phosphorothioate	--	1	2
149	24419	Phosphonic acid, [mercapto(trimethoxy=phosphoranylidene)methyl]-, dimethyl ester, <i>S</i> -ester with <i>O,O</i> -dimethyl phosphorothioate	Monsanto CP-10739	1	1
150	27078	Phosphonic acid, styryl-, diethyl ester	--	1	1
151	19763	Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester	Trichlorfon	3	2
152	25831	Phosphonodithioic acid, (chloromethyl)-, <i>S-p</i> -chlorophenyl <i>O</i> -isopropyl ester	Stauffer B-10046	1	1
153	25833	Phosphonodithioic acid, (chloromethyl)-, <i>S-p</i> -chlorophenyl <i>O</i> -propyl ester	Stauffer B-10117	1	1
154	25835	Phosphonodithioic acid, (chloromethyl)-, <i>O</i> -ethyl <i>S-p</i> -tolyl ester	Stauffer B-10190	1	1
155	25834	Phosphonodithioic acid, (chloromethyl)-, <i>O</i> -isopropyl <i>S-p</i> -tolyl ester	Stauffer B-10119	1	1
156	27251	Phosphonodithioic acid, ethyl-, <i>S-p-tert</i> -butylphenyl <i>O</i> -methyl ester	Stauffer N-4330	1	1
157	25770	Phosphonodithioic acid, ethyl-, <i>S</i> -[[[(<i>p</i> -chlorophenyl)thio]methyl] <i>O</i> -ethyl ester	Stauffer N-2860	1	3
158	27045	Phosphonodithioic acid, ethyl-, <i>S</i> -4-chloro- <i>m</i> -tolyl <i>O</i> -ethyl ester	Stauffer N-4446	1	2
159	27114	Phosphonodithioic acid, ethyl-, <i>O</i> -ethyl ester, <i>S</i> -ester with 10-(mercaptoacetyl)=phenothiazine	Stauffer N-4449	1	--
160	27013	Phosphonodithioic acid, ethyl-, <i>O</i> -ethyl ester, <i>S</i> -ester with <i>N</i> -(2-mercaptoethyl)=dimethanesulfonamide	Stauffer N-4171	1	--
161	27038	Phosphonodithioic acid, ethyl-, <i>O</i> -ethyl ester, <i>S</i> -ester with 2-[(mercaptomethyl)=thio]- <i>N</i> -methylacetamide	Stauffer N-4168	3	2
162	25713	Phosphonodithioic acid, ethyl-, <i>O</i> -ethyl <i>S-p</i> -tolyl ester	Bay 38156	1	2

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
163	27015	Phosphonodithioic acid, ethyl-, <i>O</i> -isobutyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer N-4543	1	--
164	27014	Phosphonodithioic acid, ethyl-, <i>O</i> -isopropyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer N-4539	1	--
165	27249	Phosphonodithioic acid, ethyl-, <i>O</i> -methyl <i>S</i> -phenyl ester	Stauffer N-3794	4	2
166	27250	Phosphonodithioic acid, ethyl-, <i>O</i> -methyl <i>S</i> - <i>p</i> -tolyl ester	Stauffer N-4328	2	2
167	27180	Phosphonodithioic acid, methyl-, <i>S</i> -[[(<i>p</i> -chlorophenyl)thio]methyl] <i>O</i> -methyl ester	Stauffer N-4548	1	1
168	25980	Phosphonodithioic acid, methyl-, <i>S</i> , <i>S</i> -dipropyl ester	Vir.-Car. V-C-3-676	1	--
169	25995	Phosphonodithioic acid, methyl-, <i>O</i> -methyl ester, <i>S</i> -ester with 2-mercapto- <i>N</i> , <i>N</i> -dimethylpropionamide	Bay 51580	4	1
170	25977	Phosphonodithioic acid, methyl-, <i>O</i> -methyl ester, <i>S</i> -ester with 2-mercapto- <i>N</i> -methylacetamide	Monsanto CP-19203	4	--
171	25961	Phosphonodithioic acid, methyl-, <i>O</i> -methyl <i>S</i> -phenyl ester	Stauffer N-3727	2	--
172	25978	Phosphonodithious acid, methyl-, dipropyl ester	Vir.-Car. V-C-3-665	1	--
173	25547	Phosphonodithious acid, phenyl-, diphenyl ester	--	1	--
174	27028	Phosphonothioic acid, (chloromethyl)-, <i>O</i> -ethyl ester, <i>O</i> -ester with <i>p</i> -hydroxybenzonitrile	Stauffer B-10095	2	2
175	25869	Phosphonothioic acid, ethyl-, <i>O</i> -2-chloroethyl ester, <i>O</i> -ester with <i>p</i> -hydroxybenzonitrile	Monsanto CP-40115	3	4

176	25754	Phosphonothioic acid, ethyl-, <i>O</i> -(2-chloro-4-nitrophenyl) <i>O</i> -ethyl ester	Stauffer N-2230	3	3
177	25755	Phosphonothioic acid, ethyl-, <i>O</i> -(2-chloro-4-nitrophenyl) <i>O</i> -isopropyl ester	Stauffer N-2404	3	3
178	25797	Phosphonothioic acid, ethyl-, <i>O</i> - <i>p</i> -chlorophenyl <i>O</i> -propyl ester	Stauffer N-3047	1	--
179	27277	Phosphonothioic acid, ethyl-, <i>O</i> -ethyl <i>O</i> -[<i>p</i> -(methylsulfinyl)phenyl]ester	Bay 48792	3	3
180	25826	Phosphonothioic acid, ethyl-, <i>O</i> -ethyl <i>O</i> -4-nitro- <i>m</i> -tolyl ester	Bay 45556	3	3
181	25712	Phosphonothioic acid, ethyl-, <i>O</i> -ethyl <i>O</i> -2,4,5-trichlorophenyl ester	Bay 37289	1	2
182	25785	Phosphonothioic acid, methyl-, <i>O</i> -2-chloroallyl <i>O</i> - <i>p</i> -nitrophenyl ester	Monsanto CP-40272	1	1
183	25788	Phosphonothioic acid, methyl-, <i>O</i> -4-chlorobutyl <i>O</i> -(<i>alpha</i> , <i>alpha</i> , <i>alpha</i> -trifluoro-4-nitro- <i>m</i> -tolyl) ester	Monsanto CP-40296	1	--
184	25635	Phosphonothioic acid, methyl-, <i>O</i> -2,4-dichlorophenyl <i>O</i> -methyl ester	Bay 30911	2	1
185	27033	Phosphonothioic acid, methyl-, <i>O</i> -ethyl ester, <i>O</i> -ester with <i>p</i> -hydroxybenzonitrile	Stauffer B-10341	4	3
186	25781	Phosphonothioic acid, methyl-, <i>O</i> -ethyl ester, <i>O</i> -ester with <i>N</i> -hydroxynaphthalimide	Bay 39197	3	--
187	25617	Phosphonothioic acid, methyl-, <i>O</i> -ethyl <i>O</i> -[<i>p</i> -(ethylsulfonyl)phenyl] ester	Bay 30750	3	--
188	25614	Phosphonothioic acid, methyl-, <i>O</i> -ethyl <i>O</i> -[<i>p</i> -(ethylthio)phenyl] ester	Bay 30468	1	--
189	25612	Phosphonothioic acid, methyl-, <i>O</i> -ethyl <i>O</i> -[<i>p</i> -(methylthio)phenyl] ester	Bay 29952	3	4
190	25615	Phosphonothioic acid, methyl-, <i>O</i> -methyl <i>O</i> -[<i>p</i> -(methylsulfinyl)phenyl] ester	Bay 30554	4	2
191	27276	Phosphonothioic acid, methyl-, <i>O</i> -methyl <i>O</i> -[4-(methylsulfinyl)- <i>m</i> -tolyl] ester	Bay 48772	3	3
192	25613	Phosphonothioic acid, methyl-, <i>O</i> -methyl <i>O</i> -[<i>p</i> -(methylthio)phenyl] ester	Bay 30237	3	4
193	25787	Phosphonothioic acid, methyl-, <i>O</i> - <i>p</i> -nitrophenyl <i>O</i> -phenyl ester	Monsanto CP-40294	2	3
194	25832	Phosphonothioic acid, phenyl-, <i>O</i> -ethyl ester, <i>O</i> -ester with <i>p</i> -hydroxybenzonitrile	Stauffer B-10094	3	1

Table 1.---Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
195	23285	Phosphoramidothioic acid, <i>O</i> -methyl <i>O</i> -2,4,5-trichlorophenyl ester	Dow ET-15	2	1
196	27084	Phosphoramidothioic acid, diethyl-, cyclic <i>O</i> , <i>O</i> -2,2-dimethyltrimethylene ester	--	1	--
197	27023	Phosphoramidothioic acid, [ethyl(2-hydroxyethyl)thiocarbamoyl]-, <i>O</i> , <i>O</i> -dimethyl ester	Stauffer B-9381	1	--
198	27034	Phosphoramidothioic acid, [ethyl(2-hydroxypropyl)thiocarbamoyl]-, <i>O</i> , <i>O</i> -dimethyl ester	Stauffer B-10497	1	--
199	27032	Phosphoramidothioic acid, [(2-hydroxyethyl)propylthiocarbamoyl]-, <i>O</i> , <i>O</i> -dimethyl ester	Stauffer B-10338	1	--
200	27035	Phosphoramidothioic acid, [(2-hydroxypropyl)methylthiocarbamoyl]-, <i>O</i> , <i>O</i> -dimethyl ester	Stauffer B-10498	1	1
201	25647	Phosphoramidothioic acid, isopropyl-, <i>O</i> -2,4-dichlorophenyl <i>O</i> -methyl ester	Dowco-118	1	--
202	25610	Phosphoramidothioic acid, methyl-, <i>O</i> -ethyl <i>O</i> -[4-(methylthio)- <i>m</i> -tolyl] ester	Bay 34042	3	3
203	25815	Phosphoric acid, 1-(benzylthio)vinyl diethyl ester	Shell SD-7565	4	3
204	27019	Phosphoric acid, 1-(2-bromo-4,5-dichlorophenyl)-2-chlorovinyl dimethyl ester	Shell SD-8949	3	4
205	27021	Phosphoric acid, 1-(4-bromo-2,5-dichlorophenyl)-2-chlorovinyl dimethyl ester	Shell SD-8972	3	4
206	27043	Phosphoric acid, 2-bromo-1-(2,4-dichlorophenyl)vinyl dimethyl ester	Shell SD-8988	4	--
207	25840	Phosphoric acid, 2-chloro-1-(2,4-dibromophenyl)vinyl dimethyl ester	Shell SD-8436	4	4
208	24969	Phosphoric acid, 2-chloro-1-(2,4-dichlorophenyl)vinyl diethyl ester	Shell Compound 4072	4	4
209	24968	Phosphoric acid, 2-chloro-1-(2,5-dichlorophenyl)vinyl diethyl ester	Gen. Chem. GC-3583	2	4

210	25818	Phosphoric acid, 2-chloro-1-(2,4-dichlorophenyl)vinyl dimethyl ester	Shell SD-8280	4	4
211	27018	Phosphoric acid, 2-chloro-1-(2,5-dichlorophenyl)vinyl dimethyl ester	Shell SD-8211	3	4
212	22016	Phosphoric acid, 2-chloroethyl 2,2-dichlorovinyl ethyl ester	Bay 16574	3	3
213	24941	Phosphoric acid, 2-chloroethyl 2,2-dichlorovinyl methyl ester	Bay 22684	1	4
214	24940	Phosphoric acid, 2-chloro-1-methylethyl 2,2-dichlorovinyl ethyl ester	Bay 24869	1	1
215	25816	Phosphoric acid, 1-[(p-chlorophenyl)thio]vinyl dimethyl ester	Shell SD-7587	3	4
216	24942	Phosphoric acid, 3-chloropropyl 2,2-dichlorovinyl ethyl ester	Bay 23248	2	3
217	25842	Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)vinyl diethyl ester	Shell SD-8448	1	4
218	25841	Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl ester	Shell SD-8447	3	4
219	24988	Phosphoric acid, 1,2-dibromo-2,2-dichloroethyl dimethyl ester	Naled	1	4
220	25590	Phosphoric acid, 2,2-dichloro-1-[2-(hexyloxy)ethoxy]vinyl dimethyl ester	Geigy G-34597	1	1
221	25560X	Phosphoric acid, 2,2-dichloro-1-(2-methoxyethoxy)vinyl dimethyl ester (25-percent emulsion concentrate)	Geigy G-31528	1	1
222	20739	Phosphoric acid, 2,2-dichlorovinyl diethyl ester	Ethyl DDVP	4	4
223	20738	Phosphoric acid, 2,2-dichlorovinyl dimethyl ester	Dichlorvos	4	4
224	20758	Phosphoric acid, diisopropyl 1,2,2,2-tetrachloroethyl ester	--	1	1
225	30963	Phosphoric acid, 2,4-dimethylbenzyl diethyl ester	--	1	--
226	30962	Phosphoric acid, 3,4-dimethylbenzyl diethyl ester	--	1	1
227	25515	Phosphoric acid, dimethyl ester, ester with 2-chloro-N,N-diethyl-3-hydroxy-crotonamide	Phosphamidon	1	1

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
228	24482	Phosphoric acid, dimethyl ester, ester with 3-hydroxy- <i>N,N</i> -dimethyl- <i>cis</i> -crotonamide	Shell SD-3562	1	--
229	23970	Phosphorochloridithioic acid, cyclic <i>O,O</i> -diester with 2-hydroxy- <i>alpha</i> -methylcyclohexanemethanol	Union Carbide UC-8305	1	1
230	25739	Phosphorodithioic acid, <i>S</i> -benzylidene <i>O,O</i> -dimethyl ester	Shell SD-7438	1	1
231	26161	Phosphorodithioic acid, <i>O,O</i> -bis(<i>p</i> -nonylphenyl) ester, nickel salt	--	1	--
232	25685	Phosphorodithioic acid, <i>S-p</i> -chlorophenyl <i>O,O</i> -dimethyl ester	Bay 42524	1	--
233	25596	Phosphorodithioic acid, <i>S</i> -[2-[(<i>p</i> -chlorophenyl)thio]ethyl] <i>O,O</i> -dimethyl ester	Bay 26405	1	--
234	23708	Phosphorodithioic acid, <i>S</i> -[[[(<i>p</i> -chlorophenyl)thio]methyl] <i>O,O</i> -diethyl ester	Carbophenothion	1	2
235	25608	Phosphorodithioic acid, <i>S</i> -[[[(3,3-dichloroallyl)thio]methyl] <i>O,O</i> -dimethyl ester	Monsanto CP-22258	1	1
236	25585	Phosphorodithioic acid, <i>S</i> -[[[(2,5-dichlorophenyl)thio]methyl] <i>O,O</i> -diethyl ester	Geigy G-28029	1	--
237	25555X	Phosphorodithioic acid, <i>S</i> -[[[(3,4-dichlorophenyl)thio]methyl] <i>O,O</i> -diethyl ester (25-percent emulsion concentrate)	Geigy G-27365	1	2
238	22897	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S,S</i> -diester with 2,3- <i>p</i> -dioxanedithiol	Dioxathion	1	1
239	27269	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with <i>N</i> -(2-bromo-1-mercaptoethyl)phthalimide	Hercules 13843	1	2
240	27163	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with 6-chloro-3-(mercapto-methyl)-2-benzoxazolinone	Niagara NIA-9241	1	--

241	25874	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with 1-(mercaptoacetyl)-1-methylurea	Hercules 8148-B	1	--
242	22748	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with <i>N</i> -(2-mercaptoethyl)succinimide	Bay 17364	1	--
243	25873	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with 3-(mercaptomethyl)-2-benzothiazolinone	Hercules 7846D	1	3
244	25871	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with 3-(mercaptomethyl)-2-benzoxazolinone	Hercules 6286-B	---	?
245	22745	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with 3-(mercaptomethyl)-4(3 <i>H</i>)-quinazolinone	Bay 17338	1	1
246	23446	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with mercaptophenylacetoneitrile	Bay 19641	1	--
247	27070	Phosphorodithioic acid, <i>O,O</i> -diethyl ester, <i>S</i> -ester with mercapto-2-propanone, diethyl mercaptole	Stauffer B-9323	1	2
248	24042	Phosphorodithioic acid, <i>O,O</i> -diethyl <i>S</i> -[(ethylthio)methyl] ester	Phorate	4	2
249	22865	Phosphorodithioic acid, <i>O,O</i> -diethyl <i>S</i> -[(isopropylthio)methyl] ester	Amer. Cyan. 12008	3	2
250	22866	Phosphorodithioic acid, <i>O,O</i> -diethyl <i>S</i> -[(propylthio)methyl] ester	Amer. Cyan. 12009	3	2
251	24417	Phosphorodithioic acid, <i>O,O</i> -diethyl <i>S</i> -2-propynyl ester	Monsanto CP-10613	3	1
252	25622	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S,S</i> -diester with 1,1'-thiodi-2-propanethiol	Velsicol 58-CS-51	1	--
253	27268	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester <i>S</i> -ester with <i>N</i> -(2-bromo-1-mercaptoethyl)phthalimide	Hercules 13842	1	2
254	25828	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with <i>N,N'</i> -diethyl-2-mercaptomalonamide	Bay 47185	2	1

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
255	16858	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 2-mercaptoacetamide	Amer. Cyan. 3869	1	1
256	25827	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 2-mercapto- <i>N,N'</i> -dimethylmalonamide	Bay 47043	1	1
257	27160	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 2-mercapto- <i>N</i> -(2-methoxyethyl)acetamide	Ciba Corp. Thiocron	1	--
258	24650	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 2-mercapto- <i>N</i> -methylacetamide	Dimethoate	4	2
259	23233	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 3-(mercaptomethyl)-1,2,3-benzotriazin-4(3 <i>H</i>)-one	Guthion	1	1
260	27110	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 3-(mercaptomethyl)-2-benzoxazolinone	Rhodia R.P. 11783	3	--
261	27193	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with 4-(mercaptomethyl)-2-methoxy- Δ^2 -1,3,4-thiadiazolin-5-one	Geigy GS-13005	4	3
262	25705	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)=phthalimide	Imidan	2	2
263	27072	Phosphorodithioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with mercapto-2-propanone, diethyl mercaptole	Stauffer B-9627	1	1
264	27073	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -[(2-methyl-1,3-dithiolan-2-yl)=methyl] ester	Stauffer B-10421	1	--
265	27071	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -[(2-methyl-1,3-oxathiolan-2-yl)=methyl] ester	Stauffer B-9625	1	1
266	25703	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -[(5-nitro-1 <i>H</i> -indazol-1-yl)methyl] ester	Bay 25316	3	4

267	25588	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -[[(<i>p</i> -nitrophenyl)thio]methyl] ester	Geigy G-34542	1	1
268	25594	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -[(phenylthio)methyl] ester	Geigy G-30492	1	--
269	24423	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -2-propynyl ester	Monsanto CP-11327	1	--
270	27123	Phosphorodithioic acid, <i>S</i> -4,6-dimethyl-2-pyrimidinyl <i>O</i> -ethyl <i>O</i> -isopropyl ester	Stauffer R-5763	4	--
271	27122	Phosphorodithioic acid, <i>S</i> -4,6-dimethyl-2-pyrimidinyl <i>O</i> -ethyl <i>O</i> -propyl ester	Stauffer R-5762	3	--
272	27158	Phosphorodithioic acid, <i>O,O</i> -dimethyl <i>S</i> -9-thiabicyclo[4.2.1]nonenyl ester	Hooker HRS-1634	1	--
273	25866	Phosphorodithioic acid, <i>O</i> -ethyl <i>O</i> -isopropyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer R-5724-A	1	3
274	25865	Phosphorodithioic acid, <i>O</i> -ethyl <i>O</i> -methyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer R-5723-A	2	3
275	25864	Phosphorodithioic acid, <i>O</i> -ethyl <i>O</i> -propyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer R-5722-A	1	3
276	25587	Phosphorodithioic acid, <i>S</i> -[[(<i>p</i> -fluorophenyl)thio]methyl] <i>O,O</i> -dimethyl ester	Geigy G-33397	1	--
277	25820	Phosphorodithioic acid, <i>S</i> -[2-[[1,4,5,6,7,7-hexachloro-5-norbornen-2-yl)methyl]=thio]-1-methylethyl] <i>O,O</i> -dimethyl ester	Velsicol 58-CS-52	1	1
278	25867	Phosphorodithioic acid, <i>O</i> -isopropyl <i>O</i> -methyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer R-5725-A	2	4
279	25821	Phosphorodithioic acid, <i>O</i> -methyl <i>S</i> , <i>S</i> -dipropyl ester	Vir.-Car. V-C-3-607	3	1
280	25863	Phosphorodithioic acid, <i>O</i> -methyl <i>O</i> -propyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer R-5092	1	3
281	27030	Phosphoro(monothioperoxoic) acid, <i>S</i> O-2,4-dinitrophenyl <i>O,O</i> -diethyl ester	Stauffer B-10204	1	--
282	27031	Phosphoro(monothioperoxoic) acid, <i>S</i> O-3,5-dinitro- <i>O</i> -tolyl <i>O,O</i> -diethyl ester	Stauffer B-10205	1	--

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
283	27162	Phosphorothioic acid, <i>O</i> -(4-bromo-2,5-dichlorophenyl) <i>O</i> , <i>O</i> -dimethyl ester	Nexion	1	--
284	25996	Phosphorothioic acid, <i>O</i> -5-chloro-1,2-benzisoxazol-3-yl <i>O</i> , <i>O</i> -diethyl ester	Bay 52957	1	--
285	17035	Phosphorothioic acid, <i>O</i> -(2-chloro-4-nitrophenyl) <i>O</i> , <i>O</i> -dimethyl ester	Dicaphon	2	1
286	22442	Phosphorothioic acid, <i>O</i> -(2-chloro-5-nitro- <i>m</i> -tolyl) <i>O</i> , <i>O</i> -diethyl ester	Bay 25/112	1	--
287	24418	Phosphorothioic acid, <i>O</i> (or <i>S</i>)-3,3-dichloroallyl <i>O</i> , <i>O</i> -diethyl ester	Monsanto CP-10642	2	2
288	24980	Phosphorothioic acid, <i>S</i> -[2-(diethylamino)ethyl] <i>O</i> , <i>O</i> -diethyl ester, <i>p</i> -toluenesulfonate	--	1	1
289	27029	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl ester, <i>S</i> <i>O</i> -derivative with 4'-nitroacetophenone oxime	Stauffer B-10175	2	2
290	17957	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl ester, <i>O</i> -ester with 3-chloro-7-hydroxy-4-methylcoumarin	Coumaphos	2	3
291	27144	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl ester, <i>O</i> -ester with 3-hydroxycoumarin	Niagara NIA-9227	4	4
292	23966	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl ester, <i>O</i> -ester with 6-hydroxy-3(2 <i>H</i>)-pyridazinone	Amer. Cyan. 12415	1	1
293	19507	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl <i>O</i> -(2-isopropyl-6-methyl-4-pyrimidinyl) ester	Diazinon	2	3
294	20646	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl <i>O</i> -2-methylcyclohexyl ester	--	1	1
295	22820	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl <i>O</i> -(6-methyl-2-propyl-4-pyrimidinyl) ester	Pirazinon	3	1
296	24945	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl <i>O</i> -[<i>p</i> -(methylsulfinyl)phenyl] ester	Bay 25141	4	3
297	25636	Phosphorothioic acid, <i>O</i> , <i>O</i> -diethyl <i>O</i> -[4-(methylthio)- <i>m</i> -tolyl] ester	Bay 29492	3	2

298	25673	Phosphorothioic acid, <i>O,O</i> -diethyl <i>O</i> -[4-(methylthio)-3,5-xylyl] ester	Bay 37341	1	3
299	24948	Phosphorothioic acid, <i>O,O</i> -diethyl <i>S</i> -pentachlorophenyl ester	--	1	1
300	25597	Phosphorothioic acid, <i>O,O</i> -diethyl <i>O-m</i> -pentadecylphenyl ester	Atomic Basic Chem. Corp. X-500	1	--
301	20503	Phosphorothioic acid, <i>O,O</i> -diethyl <i>O</i> -piperonyl ester	--	1	1
302	24943	Phosphorothioic acid, <i>O,O</i> -diethyl <i>O</i> -1,2,2-trimethylpropyl ester	Bay 22893	1	--
303	27165	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>O,O</i> -diester with 4,4'-thiodiphenol	Abate	1	--
304	25837	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>O</i> -ester with 3-chloro-4-hydroxybenzo= nitrile	Bay 47940	2	2
305	27235	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>O</i> -ester with 5-chlorosalicylonitrile	Bay 54203	3	4
306	25640	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>O</i> -ester with <i>p</i> -hydroxybenzenesulfonamide	Amer. Cyan. 26691	1	--
307	25675	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>O</i> -ester with <i>p</i> -hydroxybenzonitrile	Bay 34727	1	2
308	25644	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>O</i> -ester with <i>p</i> -hydroxy- <i>N,N</i> -dimethyl= benzenesulfonamide	Famophos	2	3
309	25707	Phosphorothioic acid, <i>O,O</i> -dimethyl ester, <i>S</i> -ester with <i>N</i> -(mercaptomethyl)phthalimide	Stauffer R-1571-A	2	4
310	25568	Phosphorothioic acid, <i>O,O</i> -dimethyl <i>S</i> -[2-(methylsulfinyl)ethyl] ester	Bay 24498	4	3
311	25540	Phosphorothioic acid, <i>O,O</i> -dimethyl <i>O</i> -[4-(methylthio)- <i>m</i> -tolyl] ester	Fenthion	2	4
312	25684	Phosphorothioic acid, <i>O,O</i> -dimethyl <i>O</i> -[4-(methylthio)-3,5-xylyl] ester	Bay 37342	1	2
313	25923	Phosphorothioic acid, <i>O,O</i> -dimethyl <i>O-m</i> -nitrophenyl ester	Bay 45515	1	--
314	25715	Phosphorothioic acid, <i>O,O</i> -dimethyl <i>O</i> -4-nitro- <i>m</i> -tolyl ester	Bay 41831	2	1
315	23284	Phosphorothioic acid, <i>O,O</i> -dimethyl <i>O</i> -2,4,5-trichlorophenyl ester	Ronnel	1	3

Table 1.--Continued.

Item No.	Entomology No.	Chemical name	Other designations	Class	
				Larvicide	Adulticide
316	22733	Phosphorothioic acid, <i>O</i> -[2-[(ethoxymethyl)=thio]ethyl] <i>O</i> , <i>O</i> -diethyl ester	Bay 16901	1	1
317	32827	Piperidine, 1-nonanoyl-	--	1	--
318	32826	Piperidine, 1-octanoyl-	--	1	--
319	31074	1,2-Propanediol, 3-[3,4-(methylenedioxy)=phenyl]-, diacetate	--	1	--
320	26033	2-Propanol, 1-chloro-3-(octylthio)-	Phillips 1564	1	--
321	25403	Propiophenone, 4',5'-(methylenedioxy)-2'-propyl-	--	1	--
322	25520	Pyrophosphoric acid, <i>P,P'</i> -bis(2,2-dichlorovinyl) <i>P,P'</i> -dimethyl ester	Montrose DTP	1	--
323	32856	Pyrrolidine, 1-nonanoyl-	--	1	--
324	25621	Succinic acid, 2,2-dimercapto-, diethyl ester, <i>S,S</i> -diester with <i>O,O</i> -dimethyl phosphorodithioate	Velsicol 58-CS-56	1	--
325	25620	Succinic acid, mercapto-, 4-allyl 1-(2-mercaptopropyl) ester, <i>S,S</i> -diester with <i>O,O</i> -dimethyl phosphorodithioate	Velsicol 58-CS-39	1	--
326	17034	Succinic acid, mercapto-, diethyl ester, <i>S</i> -ester with <i>O,O</i> -dimethyl phosphorodithioate	Malathion	1	2
327	27009	Succinic acid, mercapto-, diethyl ester, <i>S</i> -ester with <i>O</i> -ethyl ethylphosphono-dithioate	Stauffer N-2793	1	--
328	25209	Sulfoxide, allyl octyl	Phillips R-1357	1	--
329	25210	Sulfoxide, 2-methylallyl octyl	Phillips P-1345	1	--
330	30498	1-Tetradecanol, formate	--	1	--
331	25526	Thiocyanic acid, (1,4,5,6,7,7-hexachloro-2,5-norbornadien-2-yl)methyl ester	Velsicol 57-CS-5	1	1
332	25559X	Thiocyanic acid, 2-hydroxypropyl ester, dimethylcarbamate (25-percent emulsion concentrate)	Geigy G-31987	1	1

333	23584X	Thioperoxydiphosphoric acid, tetraethyl ester (75 percent), mixture with tetra= isopropyl thioperoxidiphosphate (25 percent)	Niagara 1137-E	1	--
334	27024	Thioperoxymonophosphoric acid, <i>O,O</i> -diethyl <i>SO</i> -[2-(ethylthio)ethyl] ester	Stauffer B-9564	1	1
335	25764	Thiophene, tetrachloro-	--	1	1
336	16894	Thiopyrophosphoric acid, tetrapropyl ester	NPD	1	1
337	25394	Tin, acetoxytributyl-	--	1	1
338	25208	Tin, acetoxytriphenyl-	Gen. Chem. GC-6936	1	--
339	25207	Tin, chlorotriphenyl-	Gen. Chem. GC-8993	1	--
340	24979	Tin, oxybis[tributyl]-	Metal Thermit LS-3394	1	--
341	25191X	Toluenethiol (a mixture of isomers)	--	1	--
342	25448	s-Triazine, 2,4,6-tris(allyloxy)-	--	1	--
343	22898	<i>o</i> -Xylene- <i>alpha, alpha'</i> -diol, 3,4,5,6-tetrachloro-	Pennsylvania Salt NP-1371	1	1
344	23512	2,6-Xylenol, <i>alpha</i> ² -chloro-4-nitro-, acetate	Bay 16031	1	--

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OFFICIAL BUSINESS

Pesticides used improperly can be injurious to man and animals. Use them only when needed and handle them with care. Follow the directions and heed all precautions on the labels.



Use Pesticides Safely
FOLLOW THE LABEL

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